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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,304	11/18/2003	Tohru Haruna	1858-30	5939

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NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

SHIAO, REI TSANG

ART UNIT PAPER NUMBER

1626

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/009,304

Applicant(s)

HARUNA ET AL.

Examiner

Robert Shiao

Art Unit

1626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on application filed on 11/18/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/26/04, 12/07/01, 1/18/03

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This application claims benefit of the foreign application:

JAPAN 11/168864 with a filing date 06/15/1999. However, an English-translated version of the certified copy of the instant foreign priority document has not been filed, therefore, the instant foreign priority has not been granted.

2. Claims 1-4 are pending in the application.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-4 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the instant nucleating agent or compositions comprising a compound of formula (I) and a resin (i.e., an ethylene-propylene random polymer), does not reasonably provide enablement for instant nucleating agent or compositions comprising a compound of formula (I) and another compound of resin, i.e., ethylene-pentylene block polymer.

The specification does not enable any person skilled in the art to which it pertains, with which it is most nearly connected, to use the invention commensurate in scope with these claims, i.e., see claim 1 and pages 1-8 and Examples on pages 19-22 of the specification.

For rejections under 35 U.S.C. 112, first paragraph, the following factors must be considered (In re Wands, 8 USPQ2d 1400, 1988):

- 1) Nature of invention.
- 2) State of prior art.
- 3) Level of ordinary skill in the art.
- 4) Level of predictability in the art.
- 5) Amount of direction and guidance provided by the inventor.
- 6) Existence of working examples.
- 7) Breadth of claims.
- 8) Quantity of experimentation needed to make or use the invention based on the content of the Disclosure.

See below:

1) Nature of the invention

The claims are drawn to a nucleating agent or compositions comprising a compound of formula (I) (i.e., average ratio of 10 or less) without limitation of the other specific or required elements, i.e., resin or the rest of 90 % of specific elements.

2) State of the prior art

The reference Kimura et al. US 5,342,868 does not indicate which compounds of instant compounds may be useful in the claimed invention. Kimura et al. '868 is pertaining to crystalline synthetic resin composition.

3) Level of ordinary skill in the art.

The level of ordinary skill in the art is high. The claims are drawn to a nucleating agent or compositions comprising a compound of formula (I) (i.e., average ratio of 10 or

less) without limitation of the other specific or required elements, i.e., resin or the rest of 90 % of specific elements, by the instant examples disclosed in the specification.

4) Level of predictability in the art.

The claims are drawn to a nucleating agent or compositions comprising a compound of formula (I) (i.e., average ratio of 10 or less) without limitation of the other specific or required elements, i.e., resin or the rest of 90 % of specific elements, there would be little predictability in the scope of claimed compounds or methods of use.

5) Amount of direction and guidance provided by the inventor.

The claims are drawn to a nucleating agent or compositions comprising a compound of formula (I) (i.e., average ratio of 10 or less) without limitation of the other specific or required elements, i.e., resin or the rest of 90 % of specific elements, such as ethylene-pentylene block polymer, which are neither enabled nor supported in the specification.

6) Existence of working examples.

The claims are drawn to a nucleating agent or compositions comprising a compound of formula (I) (i.e., average ratio of 10 or less) without limitation of the other specific or required elements, i.e., resin or the rest of 90 % of specific elements, the specification provides only limited examples of compositions or products.

7) Breadth of claims.

The claims are extremely broad due to the vast number of possible "a nucleating agent or compositions comprising a compound of formula (I) (i.e., average ratio of 10 or

less) without limitation of the other specific or required elements, i.e., resin or the rest of 90 % of specific elements”.

8) Quantity of experimentation needed to make or use the invention based on the content of the disclosure.

The specification did not enable any person skilled in the art to which it pertains to make or use the invention commensurate in scope with this claim. In particular, the specification failed to enable the skilled artisan to practice the invention without undue experimentation. The skilled artisan would have a numerous products in order to obtain “ a nucleating agent or compositions comprising a compound of formula (I) (i.e., average ratio of 10 or less) without limitation of the other specific or required elements, i.e., resin or the rest of 90 % of specific elements” as claimed. Based on the unpredictable nature of the invention and state of the prior art and the extreme breadth of the claims, one skilled in the art could not perform the claimed compounds without undue experimentation, see *In re Armbruster* 185 USPQ 152 CCPA 1975. Incorporation of limitation of “a nucleating agent or compositions comprising a compound of formula (I) (i.e., average ratio of 10 or less) without limitation of the other specific or required elements, i.e., resin polypropylene polymer or the rest of 90 % of specific elements”, would obviate the rejection, see pages 1-8 and Examples on pages 19-22 of the specification.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: another 90% portions of the instant nucleating agent or compositions, see claim 1.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

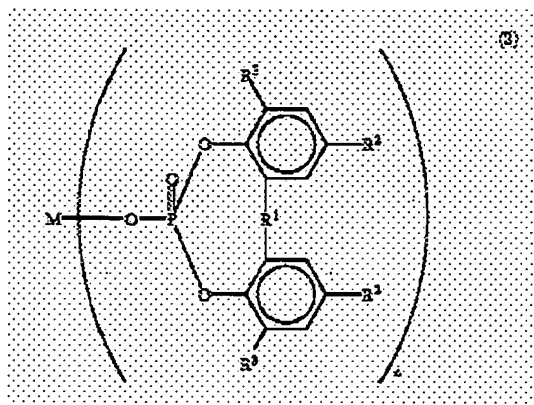
(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4 are rejected under 35 U.S.C. 102(a) as being anticipated by Takahashi et al. US 6,184,275 or Nakamura et al. US 6,153,715. Takahashi et al '275 or Nakamura et al. '715 is 102 (e) reference.

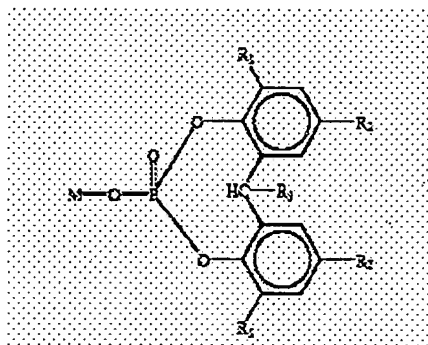
Applicants claim a nucleating agent or compositions comprising a compound phosphoric acid of formula (I) (i.e., average ratio of 10 or less), see claim 1. It is noted that the preamble of the characteristic of the length of compounds of formula (I) does not obtain any patentability weight. The instant nucleating agent or compositions are found on pages 1-22 of the specification.

Nakamura et al. disclose a nucleating agent or compositions comprising organic



phosphoric acid compounds of formula (2), wherein the variable M represents a 1-3 valent metal (i.e., 1-2); the variable n represents an integer 1 to 3 (i.e., 1 to 2); the variable R¹ represents C₁-C₁₀ hydrocarbon group (i.e., C₁₋₄ alkylidene group); the variable R² or R³ independently represents hydrogen or C₁-C₁₀ hydrocarbon (i.e., C₁₋₈ alkyl group). A specific compound sodium 2,2'-methylelnbis(4,6-di-t-butylphenyl)phosphate has been exemplified, see columns 5-6, especially column 6, lines 65-67. Nakamura et al. organic phosphoric acid compounds of formula (2) are incorporated into the compositions (i.e., propylene resin) in an amount of 0.001-10 parts or 0.1-3 parts (i.e., 10 parts or less) by weight, see column 8, lines 5-7. Therefore, Nakamura et al. nucleating agents or compositions anticipate the instant nucleating agent or compositions, and Nakamura et al. compound sodium 2,2'-methylelnbis(4,6-di-t-butylphenyl)phosphate specifically reads on the compound of instant claim 4.

Takahashi et al. disclose a nucleating agent or compositions comprising organic

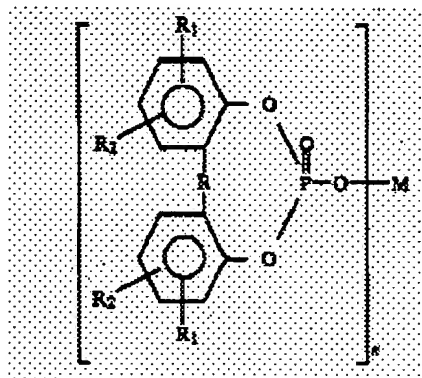


phosphoric acid compounds of formula (I), wherein the variable M represents a alkali metal (i.e., Na); the variable R₃ represents hydrogen or alkyl group having 1 to 4 carbon atoms; the variable R₁ or R₂ independently represents alkyl group having 1 to 9 carbon atom(i.e., 1-8 carbon atoms). A specific compound No. 1 has been exemplified, see columns 2-4, especially column 3, lines 5-15. Takahashi et al. organic phosphoric acid compounds of formula (I) are incorporated into the compositions (i.e., propylene resin or polymer) in an amount of 0.005-5 parts by weight (i.e., 10 parts or less), see column 2, lines 30. Therefore, Takahashi et al. nucleating agents or compositions anticipate the instant nucleating agent or compositions, and Takahashi et al. compound No. 1 specifically reads on the compound of instant claim 4.

7. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakahara et al. US 4,463,113.

Applicants claim a nucleating agent or compositions comprising a compound phosphoric acid of formula (I) (i.e., average ratio of 10 or less), see claim 1. It is noted that the preamble of the characteristic of the length of compounds of formula (I) does not obtain any patentability weight. The instant nucleating agent or compositions are found on pages 1-22 of the specification.

Nakahara et al. disclose compositions (i.e., a nucleating agent) comprising



phosphate compounds of formula (I), wherein the variable M represents a alkali metal (i.e., Na); the variable R represents alkylidene (i.e., C₁-C₄ alkylidene); the variable R₁ or R₂ independently represents hydrogen or alkyl group having 1 to 18 carbon atom(i.e., 1-8 alkyl group); the variable n is an integer 1 or 2. A specific compound No. 1 has been exemplified, see columns 26, and column 39, lines 12-65. Nakahara et al. et al. phosphate compounds of formula (I) are incorporated into the compositions (i.e., propylene resin or polymer) in an amount of 0.005-5 parts by weight (i.e., 10 parts or less), see column 39, lines 62-65. Therefore, Nakahara et al. nucleating agents or compositions anticipate the instant nucleating agent or compositions, and Nakahara et al. compound No. 1 specifically reads on the compound of instant claim 4.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

“Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re

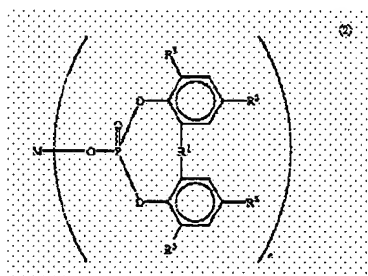
Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Also see M.P.E.P. 2113.

9. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. US 6,153,715. Nakamura et al. '715 is 102 (e) reference.

Applicants claim a nucleating agent or compositions comprising a compound phosphoric acid of formula (I) (i.e., average ratio of 10 or less). It is noted that the preamble of the characteristic of the length of compounds of formula (I) does not obtain any patentability weight. The instant nucleating agent or compositions are found on pages 1-22 of the specification.

Determination of the scope and content of the prior art (MPEP §2141.01)

Nakamura et al. disclose a nucleating agent or compositions comprising organic phosphoric acid compounds of formula (2),



A compound sodium 2,2'-methylenebis(4,6-di-*t*-

butylphenyl)phosphate has been specifically exemplified, see columns 5-6, especially column 6, lines 65-67. Nakamura et al. organic phosphoric acid compounds of formula (2) are incorporated into the compositions (i.e., propylene resin) in an amount of 0.001-10 parts or 0.1-3 parts (i.e., 10 parts or less) by weight, see column 8, lines 5-7.

Determination of the difference between the prior art and the claims (MPEP §2141.02)

The difference between instant nucleating agent or compositions and Nakamura et al. is that the variable n of instant compounds of formula (I) represents 1 or 2, while Nakamura et al. represents 1 to 3 at the same position. Nakamura et al. compound sodium 2,2'-methylelnbis(4,6-di-t-butylphenyl)phosphate reads on the compound of the instant claim 4.

Finding of prima facie obviousness-rational and motivation (MPEP §2142-2143)

One having ordinary skill in the art would find the claims 1-4 prima facie obvious because one would be motivated to employ the nucleating agent or compositions of Nakamura et al. to obtain instant nucleating agent or compositions comprising compounds of formula (I), wherein an average aspect ratio of 10 or less of compounds of formula (I) are incorporated into the instant nucleating agent or compositions.

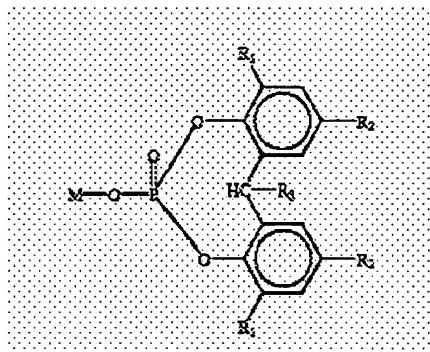
The motivation to make the claimed nucleating agent or compositions derives from the expectation that the instant claimed nucleating agent or compositions from known Nakamura et al. nucleating agent or compositions would possess similar activity (i.e., improving strength or rigidity of the resin) to that which is claimed in the reference.

10. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. US 6,184,275. Takahashi et al '275 is 102 (e) reference.

Applicants claim a nucleating agent or compositions comprising a compound phosphoric acid of formula (I) (i.e., average ratio of 10 or less). It is noted that the preamble of the characteristic of the length of compounds of formula (I) does not obtain any patentability weight. The instant nucleating agent or compositions are found on pages 1-22 of the specification.

Determination of the scope and content of the prior art (MPEP §2141.01)

Takahashi et al. disclose a nucleating agent or compositions comprising organic



phosphoric acid compounds of formula (I),

A specific compound No. 1 has been exemplified, see columns 2-4, especially column 3, lines 5-15. Takahashi et al. organic phosphoric acid compounds of formula (I) are incorporated into the compositions (i.e., propylene resin or polymer) in an amount of 0.005-5 parts by weight (i.e., 10 parts or less), see column 2, lines 30.

Determination of the difference between the prior art and the claims (MPEP §2141.02)

The difference between instant nucleating agent or compositions and Takahashi et al. is that the variable n of instant compounds of formula (I) represents 1 or 2, while

Takahashi et al. represents 1 at the same position. Takahashi et al. compound No. 1 reads on the compound of the instant claim 4.

Finding of prima facie obviousness-rational and motivation (MPEP §2142-2143)

One having ordinary skill in the art would find the claims 1-4 prima facie obvious because one would be motivated to employ the nucleating agent or compositions of Takahashi et al. to obtain instant nucleating agent or compositions comprising compounds of formula (I), wherein an average aspect ratio of 10 or less of compounds of formula (I) are incorporated into the instant nucleating agent or compositions.

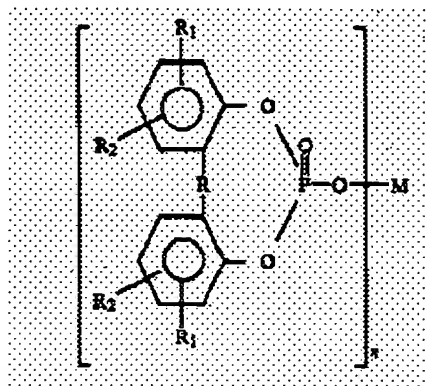
The motivation to make the claimed nucleating agent or compositions derives from the expectation that the instant claimed nucleating agent or compositions from known Takahashi et al. nucleating agent or compositions would possess similar activity (i.e., improving strength or transparency of the resin) to that which is claimed in the reference.

11. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al. US 4,463,113.

Applicants claim a nucleating agent or compositions comprising a compound phosphoric acid of formula (I) (i.e., average ratio of 10 or less). It is noted that the preamble of the characteristic of the length of compounds of formula (I) does not obtain any patentability weight. The instant nucleating agent or compositions are found on pages 1-22 of the specification.

Determination of the scope and content of the prior art (MPEP §2141.01)

Nakahara et al. disclose compositions (i.e., a nucleating agent) comprising



phosphate compounds of formula (I),

A specific compound No. 1 has been exemplified, see columns 26, and column 39, lines 12-65. Nakahara et al. et al. phosphate compounds of formula (I) are incorporated into the compositions (i.e., propylene resin or polymer) in an amount of 0.005-5 parts by weight (i.e., 10 parts or less), see column 39, lines 62-65.

Determination of the difference between the prior art and the claims (MPEP §2141.02)

The difference between instant nucleating agent or compositions and Nakahara et al. is that the variable R^3 of instant compounds of formula (I) represents C_1 - C_4 alkylidene group, while Nakahara et al. represents a carbon-to-carbon bond or alkylidene group at the same position. Nakahara et al. compound No. 1 reads on the compound of the instant claim 4.

Finding of prima facie obviousness-rational and motivation (MPEP §2142-2143)

One having ordinary skill in the art would find the claims 1-4 prima facie obvious because one would be motivated to employ the nucleating agent or compositions of

Nakahara et al. to obtain instant nucleating agent or compositions comprising compounds of formula (I), wherein an average aspect ratio of 10 or less of compounds of formula (I) are incorporated into the instant nucleating agent or compositions.

The motivation to make the claimed nucleating agent or compositions derives from the expectation that the instant claimed nucleating agent or compositions from known Nakahara et al. nucleating agent or compositions would possess similar activity (i.e., improving clarity or transparency of the resin) to that which is claimed in the reference.

Objection

12. Claim 1 is objected. Since claim 1 is drawn to compositions claim, therefore, amendment of claim 1 being a compositions claim would obviate the objection. Claim 1, line 4, recites the term "the metal salt", is objected. Replacement of the term "the metal salt" with the term " phosphoric acid aromatic ester metal salt" would objection the objection.

Claim 1, lines 7 and 10, recite the open or close parentheses, i.e., "(" or ")". Elimination of the parentheses would obviate the objection.

Telephone Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Shiao whose telephone number is (571) 272-0707. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane can be reached on (571) 272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Robert Shiao

Robert Shiao, Ph.D.
Patent Examiner
Art Unit 1626

KAMAL A. SAEED, PH.D.
PRIMARY EXAMINER
for Kamal Saeed
Joseph K. McKane
Supervisory Patent Examiner
Art Unit 1626

October 26, 2005